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09/615,705	07/13/2000	Yoko Horiguchi	Q60098	4487

7590

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EXAMINER

NADAV, ORI

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 07/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/615,705

Applicant(s)

HORIGUCHI, YOKO

Examiner

ori nadav

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13, 15, 17, 19 and 21-32 is/are pending in the application.
- 4a) Of the above claim(s) 2, 4-7, 11, 13, 15, 17 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 8-10, 12 and 21-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3, 8-10 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 3, 8, 10 and 12 depend on non-elected claims, thus rendering them indefinite. Note that if claim 1 is allowed, claims 3, 8, 10 and 12 would not be allowed in their present format.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1, 3, 8, 10, 12, 21-23 and 25-32, insofar as in compliance with 35 U.S.C. 112, are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuya (Jp 11-154733).

Furuya teaches in figure 6 a semiconductor device comprising a capacitor 613 connected between a power source wire 600 and a ground potential wire 603, a power source terminal 605 to which voltage is applied, a ground terminal 606 to which the ground potential wire is connected, and an ESD being a MOSFET connected in parallel with the capacitor, and a wire resistance of the ground potential between the ESD element connection point and the ground terminal 606 being larger than that between the ESD element connection point and the MOS capacitor's connection point.

The wire resistance of the ground potential between the ESD element connection point and the ground terminal 606 is larger than that between the ESD element connection point and the capacitor's connection point, because a wire resistance is directly proportional to the length of the wire, and the distance between the ESD element connection point and the ground terminal 606 is larger than that between the ESD element connection point and the capacitor's connection point.

Furuya does not teach in the embodiment of figure 6 that capacitor 613 is a MOS capacitor.

Furuya teaches that capacitors of the described invention are MOS capacitors (abstract). It would have been obvious to a person of ordinary skill in the art at the time

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the invention was made to use a MOS capacitor in the embodiment of figure 6 in Furuya's device, in order to form the device as taught by Furuya.

Regarding claims 3 and 22, Furuya teaches no other diffusion layer except the ESD element is connected on the ground potential wire between the ground terminal and the connection point on the ground potential wire with one end of the MOS capacitor.

Regarding claims 10 and 25, although Furuya does not explicitly disclose the ESD element clamps a voltage applied to both terminals at a clamp voltage which is lower than the dielectric breakdown voltage of the MOS capacitor, this feature is inherent in Furuya's device, because Furuya's structure is identical to the claimed structure.

Regarding claims 12 and 26, Furuya teaches in figure 5 an ESD MOSFET, the drain of which is connected to the power source wire and the source and gate of which are connected to the ground potential wire.

Regarding claims 27, 29-30 and 32, Furuya teaches an ESD element comprising a bipolar transistor or a diode.

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Regarding claims 28 and 31, Furuya teaches an ESD element comprising a bipolar transistor or a diode. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use an ESD element comprising a thyristor in Furuya's device, because thyristor is a well known ESD protection device.

5. Claims 9 and 24, insofar as in compliance with 35 U.S.C. 112, are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuya in view of Merritt (5,828,095).

Furuya teaches substantially the entire claimed structure, as applied to claims 1 and 21 above, except supplying the power voltage through a power source conversion circuit. Merritt teaches supplying a power voltage through a power source conversion circuit (column 1, lines 21-23). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to supply the voltage in Furuya's device through a power source conversion circuit, in order to provide the appropriate voltage to the device.

### ***Response to Arguments***

6. Applicant argues that claims 3, 8, 10, 12 and 13 are not indefinite, because they also depend on claim 1.

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Claims 3, 8, 10, 12 and 13 depend on claims 1 or 2. Claim 2 is not under consideration. Claims 3, 8, 10, 12 and 13 can depend only on claim 2, which render them indefinite. Note that if claim 1 is allowed, claims 3, 8, 10, 12 and 13 would not be allowed in their present format.

7. Applicant argues that figure 6 of Furuya does not suggest that the wire resistance of the ground potential between the ESD element connection point and the ground terminal is larger than that between the ESD element connection point and the capacitor's connection point.

The wire resistance of the ground potential between the ESD element connection point and the ground terminal 606 in figure 6 of Furuya is larger than that between the ESD element connection point and the capacitor's connection point, because a wire resistance is directly proportional to the length of the wire, and the distance between the ESD element connection point and the ground terminal 606 is larger than that between the ESD element connection point and the capacitor's connection point.

8. Applicant argues that the examiner can not rely on figure 6 of Furuya to teach the claimed resistive relationship, because drawings do not define the precise proportions of elements.

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The examiner does not rely on figure 6 of Furuya to teach the precise proportions of the elements. Figure 6 of Furuya depicts that the ESD element connection point is located between ground terminal 606 and the capacitor's connection point. The ESD element connection point is located adjacent to the capacitor's connection point on the horizontal side of the circuit and on the vertical side of the circuit. Ground terminal 606 is located only on the horizontal side of the circuit. Clearly the distance between the ESD element connection point and the capacitor's connection point which are located on vertical side of the circuit is smaller than the distance between the ESD element connection point and the ground terminal 606. Therefore, the distance between the ESD element connection point and the ground terminal 606 is larger than that between the ESD element connection point and the capacitor's connection point, as claimed.

### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not



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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

**Papers related to this application may be submitted to Technology center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722 and 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.**

Any inquiry concerning this communication or any earlier communication from the Examiner should be directed to *Examiner Nadav* whose telephone number is **(703) 308-8138**. The Examiner is in the Office generally between the hours of 7 AM to 4 PM (Eastern Standard Time) Monday through Friday. If attempts to reach the examiner by

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telephone are unsuccessful, the examiner's supervisor, Tom Thomas, can be reached at **(703) 308-2772**.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Technology Center Receptionists** whose telephone number is **308-0956**



O.N.  
June 25, 2003

ORI NADAV  
PATENT EXAMINER  
TECHNOLOGY CENTER 2800